

ENVIRONMENTAL PROTECTION  
AGENCY REGION II  
2012 AUG 20 PM 4:10  
RCRA COMPL. BR.



## RCRA SAMPLING INVESTIGATION

**AES Puerto Rico, LP  
Guayama, Puerto Rico**

**PRR000011965**

**March 13, 2012**

**Participating Personnel:**

U.S. Environmental Protection Agency  
Robert Morrell, Geologist  
Thuan Tran, Environmental Scientist  
Leonard Grossman, Enforcement Officer

Puerto Rico Environmental Quality Board  
Frances Segarra, Sr. Environmental Quality Specialist  
Gloria M. Toro, Hazardous Waste Permits Division

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AES Puerto Rico, LP  
Hector Avila, Environmental Coordinator  
Jon Reimann, Manager – Environmental Affairs

**Report Prepared by:**

Robert A. Morrell 8/13/12  
Robert Morrell, Geologist  
Monitoring Operations Section

**Approved for the Director by:**

John S. Kushwara 8/14/12  
John S. Kushwara, Chief  
Monitoring and Assessment Branch



## **RCRA Sampling Investigation**

### Objective

A RCRA Sampling Investigation was conducted at AES Puerto Rico LP on March 13, 2012. The facility is a coal-fired electrical power plant located on Route 3 in Guayama, Puerto Rico. During the combustion of coal, fly ash and bottom ash are generated. AES Puerto Rico is currently exploring beneficial uses for its coal combustion products. Fly ash and bottom ash are mixed with water in the pug mill to produce a manufactured aggregate known as Agremax. This manufactured aggregate gains strength during the curing process, similar to concrete. AES Puerto Rico intends to market the Agremax for applications such as road beds, soil amendments, asphalt, and concrete. EPA is concerned that unrestricted use of the Agremax could potentially result in the leaching of toxic constituents into the environment. The purpose of this sampling survey was to collect a representative composite sample from the pile of manufactured aggregate that is being stored at the Guayama facility. This sample will be analyzed using the Leaching Environmental Assessment Framework (LEAF), which consists of four leaching methods that are designed to characterize materials intended for beneficial reuse. The analytical results will provide a leaching assessment of the manufactured aggregate known as Agremax. Analytical results will also be used to support potential violations of the Resource Conservation and Recovery Act (RCRA).

### Survey Participants

#### Puerto Rico Environmental Quality Board

Frances Segarra, Senior Environmental Quality Specialist

Mariangely Santiago

Gloria M. Toro, Hazardous Waste Permits Division

Josefina Juarez, Hazardous Waste Compliance

#### AES Puerto Rico, LP

Ramiro Rivera, Engineering Manager

Hector Avila, Environmental Coordinator

Jon Reimann, Manager – Environmental Affairs

Ron Rodrique, Assistant Plant Manager

Manuel Mata, Plant Manager

Carlos Gonzalez, Safety Leader

Eitel Figueroa, CCP Project Manager

Russell Stapp, AES North America

Omar Perez, Puerto Rico Test and Services

U.S. Environmental Protection Agency  
Leonard Grossman, Enforcement Officer  
Thuan Tran, Environmental Scientist  
Robert Morrell, Geologist

### Facility Description

AES Puerto Rico is located on Route 3 in Guayama, Puerto Rico. The facility is a coal-fired electrical power plant. Low-sulfur Colombian coal is delivered to the facility by barge. Fly ash and bottom ash are generated during the coal combustion process. The fly ash and bottom ash are conveyed to the pug mill, where water is added to the mixture. After mixing, the manufactured aggregate mix is conveyed to a pile in the staging area. After 10-14 days of curing, the manufactured aggregate (Agremax) is ready for use.

### EPA Sampling Activities

A composite sample of the manufactured aggregate was collected from the final product pile. The composite sample consisted of twenty grab samples from randomly-selected locations throughout the pile. At each location, four scoops of manufactured aggregate were placed into each 5-gallon composite sample container using a polypropylene scoop. Two 5-gallon plastic containers were filled for the EPA composite sample. Two 5-gallon plastic containers were also filled for the split sample provided for AES Puerto Rico. The manufactured aggregate in the composite sample containers was mixed with a polypropylene scoop during the sample collection activities. After the composite sample was collected, the lids to the containers were sealed. The EPA sample containers were placed in coolers and shipped overnight to the U.S. EPA RTP Laboratory in Durham, North Carolina, for the LEAF analysis.

### Analytical Results

The laboratory data generated by the U.S. EPA RTP Laboratory will be submitted under separate cover to the RCRA Compliance Branch.

### Findings

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The analytical results will be used by the RCRA Compliance Branch to assess the leaching potential of the manufactured aggregate known as Agremax. In addition, the analytical results will be used to determine compliance with regulations pertaining to RCRA.

Attachments

Photographs (#1 - #2)

Chain of Custody / Field Data Form

Receipt for Samples

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## PHOTO LOG

**Photo #1:** View of the manufactured aggregate pile where the composite sample was collected.



**Photo #2:** Another view of the manufactured aggregate pile.





US EPA REGION 2 LABORATORY  
CHAIN OF CUSTODY/ FIELD DATA FORM

Page 1 of 1 pages

SURVEY NAME & LOCALITY: AES Guayama - Guayama, P.R.  
 PROGRAM: SF ☐ : PROJECT LEADER: Bob Morrell  
 Decision: RCRA ☒ D210 RCRA ☐ D307 RCRA ☐ D307 NPDES ☐ B304 SDWA ☐ C215 AM ☐ B224 CAA ☐ A305  
 Unit Code: Y206 PROGRAM RESULTS CODE: TSCA ☐ OD ☐ FIFRA ☐ CRIMINAL ENF ☐ B253  
 SITE ID: OPERABLE UNIT: B253

Permit #: Manufactured Aggregate 2  
 LAB ID/ FIELD ID: compos. 1a  
 DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS:  
2 5-gallon plastic buckets for LEAF

LAB ID/ FIELD ID	# OF CONTAINERS	CHECK IF SPLIT SAMPLE	MATRIX	Res CL Checked	Preservative (circle)	Collection Time (24hr clock)		Collection Date mm/dd/yy
						Begin	End	
		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	1145	1245	03/13/12
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			

COMMENTS & SPECIAL REQUIREMENTS:

Matrix: A=aqueous B=aqueous (chlorinated) C=sol D=sediment E=sludge	Relinquished By: <u>Robert A. Morrell</u>	Person Assuming Responsibility for Sample(s): <u>Robert A. Morrell</u>	Time 1245	Date 3/13/12
Relinquished By:	Received By:			
Relinquished By:	Received By:			
Relinquished By:	Received By:			

Preservative Added & Checked:  
 0=ice 7=FAS  
 1=H2SO4 pH<2 8=ZnAc  
 2=HNO3 pH<2 9=NaOH pH>12  
 3=HCl pH<2 10=NH4Cl  
 4=Na2S2O3  
 5=NaOH pH>9  
 6=Ascorbic Acid



# Receipt for Samples

[illegible]

